color is broad and most conspicuous, is very narrow and much less distinct in *T. virgo.*

As to measurements, the new species appears to me to be altogether a somewhat larger bird. Thus the length of the wing is 122 millim. in *T. virgo,* and 119 millim. in *T. bicolor*; the length of the tail is 85 millim. in *T. virgo,* but only 75 millim. in our specimen of *T. bicolor.*

The locality in Eastern Equatorial Africa where the unique specimen (at present in my collection) was shot by Dr. Emin Bey he names "Djanda." It is the most northern point where the genus *Tympanistria* has been found in the eastern territories of the African continent.

As to *T. bicolor* (=*fraseri*, Bp.), the reader will find all the necessary information in the elaborate and most interesting paper on the Columbidæ of the Ethiopian Region by Capt. Shelley (Ibis, 1883, p. 326).

III.—*On the Nest and Eggs of Swainson's Warbler* (Helonæa swainsoni). By William Brewster *.

It is already a matter of record † that during the year 1884 Mr. Arthur T. Wayne and I found Swainson's Warbler in some numbers near Charleston, South Carolina, where upwards of fifty specimens were taken, including the previously undescribed young in first plumage. But although we ascertained beyond all doubt that the birds bred there, we utterly failed to find the nest, or even to learn anything definite regarding its probable character and position.

In May of the present year I visited Charleston for the third time, and with Mr. Wayne spent several days wading about in the swamps in the hope of stumbling on the prize. But the birds (perhaps thinned by our merciless collecting of the preceding season) proved so very scarce that we often spent an entire day in their haunts without either seeing or hearing one, and the search for a nest seemed so hopeless that I soon abandoned it for a more promising undertaking elsewhere. Mr. Wayne, however, continued it with unremitting perseverance, and after many disappointments his labours were finally rewarded; for early in June he succeeded in finding two nests, the first that have ever been taken. His account of the interesting experience, kindly placed in my hands for publication, is as follows:—

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* Reprinted from 'Forest and Stream,' vol. xxiv. no. 24, July 9, 1885, p. 468, and from 'The Auk,' 1885, p. 346, by the kind permission of the author.

† See 'Forest and Stream,' Nov. 6, 1884, pp. 285, 286, and 'The Auk,' vol. ii. no. 1, January, 1885, pp. 65–80.

"Feeling sure that a pair of these Warblers had a nest in a swamp, I searched the place carefully many days in succession. The male was usually present, but he sang in so many different places that I could not tell where his mate and eggs were concealed. At length (on June 5) while forcing my way through a dense tract of canes, I stopped to rest and look about, feeling half disposed to give up the task altogether, when my eye was suddenly arrested by the sight of a bird sitting near at hand on what appeared to be a mass of rubbish lodged in the top of a cane. I saw almost immediately that it was a Swainson's Warbler, and advanced, when it flew and alighted on the ground, feigning lameness, but keeping perfect silence. Upon examining the supposed rubbish, I found, to my great delight, that I had at length discovered the veritable nest of a Swainson's Warbler; but to my disgust it contained only a single young bird about five days old. I shot the male shortly afterwards as it was feeding the young bird, but the female escaped. The nest was built in a cane about four feet above a pool of stagnant water.

"Having now some definite knowledge of the position of the nest, I went next day (June 6) to a neighbouring swamp where I had seen a pair of the birds. After a short search I started the female, which sat very closely, merely dropping to the ground as I brushed past the nest, and quickly gliding out of sight, simulating lameness like the female of the first nest. I waited fully half an hour before she returned accompanied by her mate. Both birds chirped like a *Parula*, and finally the female went to the nest and resumed incubation. I crept cautiously to within three feet of her, and looked at her for a few moments, then retreating to a proper distance, shot her on the nest. I afterwards secured the male also, but not easily, for he was unusually shy. This nest, like the first, was built in a cane over a pool of stagnant water, but it was placed higher, at least six feet above the water. It contained one young bird just hatched and two eggs, addled, but in every way perfect."

These eggs, with the nest in which they were found, have been very kindly sent me by Mr. Wayne for examination and description. The nest is a remarkable affair, composed mainly of leaves—chiefly of the red maple (*Acer rubrum*), sweet gum (*Liquidambar styraciflua*), water-oak (*Quercus aquatica*), and cane (*Arundinaria tecta*)—bleached by the sun and winds or stained by long immersion in swamp-water, and loosely impacted in a large and nearly globular mass, one side of which rests between, but is in no way fastened to, the upright stem and nearly upright, slightly diverging, fascicled branches of a cane, the bottom of the structure being about four inches above the point of junction of the main stem and its fascicle. As only a little more than one third of the circumference of the nest is enclosed by these supports, it is probable that they were forced slightly outward during the process of building, for otherwise they could scarcely clasp this small portion with sufficient firmness to sustain the weight of the whole. The sides of the mass round inward at the top, which, however, is round and flat, as if a perfect globe had been first formed and the top afterwards sliced off. Near the inner edge of this flat surface is the nest proper, a deep, neatly rounded, cup-shaped hollow, smoothly and very prettily lined with needles of the short-leaved pine (*Pinus mitis*) and a few fine black roots, which curiously resemble horse-hairs. The inner walls of this cavity next the supporting canes are only about half an inch in thickness, but its outer rim is bordered by a platform from one and a half to two inches in width. Many of the leaves on the outer edge of this platform are fixed with their stems pointing obliquely upwards and outwards, forming a bristling fringe, an arrangement which may have been accidental, or perhaps was intended to give the exterior a natural and inconspicuous appearance. If the latter, the design was most happily conceived, for from the outside the whole affair looks like a bunch of old leaves. Something very like it might be made by taking the nest of our Oven-bird (*Siurus auricapillus*), tearing off the domed top, and pressing one side down among a cluster of elastic sprouts. In a word, it is a ground-nest placed in a bush, or rather a hybrid between the ground and bush types of bird architecture, loosely, yet on the whole substantially constructed, planned with rare cunning, and admirably calculated to escape detection from prying eyes.

The interior cavity measures 1·75 * in diameter by 1·50 in depth; the entire nest externally 4·00 across the top, 4·50 in horizontal diameter at the middle, and about 4·00 in total depth.

The other nest is described to me by Mr. Wayne as "a rude structure, in fact a mere bunch of leaves, chiefly of the sweet gum and cane, lined almost entirely with 'pine-straw,' some rootlets, and a few strands of horsehair. Although rough outwardly, I must say that it is beautifully finished inside."

The eggs measure respectively ·75 × ·59 and ·74 × ·59. The one giving the former dimensions is almost perfectly elliptical, the opposite ends being essentially uniform in size and outline. The other is more oval, but its smaller end is still decidedly blunt and rounded. In colour both are dull dead white with a bluish tinge, so faint that it is appreciable only in certain lights, or when the specimen is placed on white cotton or by the side of a perfectly white egg, as that of a Swallow or a Woodpecker. The shell is smooth to the touch, but under a glass shows rather numerous pits or pores; it has a moderate polish, more than that of a Swallow's egg, less than that of most Woodpeckers. At first sight both eggs appear immaculate, and one is really absolutely so. The other has a single small round spot of a deep golden brown colour. This will not rub off under a free application of water and as much friction as I have dared to use; but nevertheless I am inclined to consider it merely some accidental stain.

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* The measurements given in this article are all in inches and their hundredths.

The character of these nests, their position, and the colour of the eggs which one of them contained are all alike unexpected. One would have predicted that the bird would prove to be a ground-builder, that its nest would be closely concealed, and that the eggs would be distinctly spotted; all of which goes to show how very idle any speculation in such cases is likely to prove. In respect to the eggs, it is possible that they may be normally spotted. If always immaculate, they will be unique in this respect among the eggs of North-American *Sylvicolidæ.* This point probably requires further investigation, but in a general way the mystery hitherto enveloping the breeding of Swainson's Warbler may be said to be ended. The thanks of ornithologists at large are certainly due Mr. Wayne for his important services in this connexion, services performed at no small risk to health, if not to life itself; for the Southern canebrakes reek with malaria, and mocassin snakes are dangerous neighbours. But in spite of these obstacles the life-history of the interesting bird has been worked out nearly to the end, and the pages that remain to be added are comparatively few and unimportant.—*Forest and Stream,* July 9, 1885.

Shortly after the publication of my first article on this subject, Mr. Wayne sent me two more nests of Swainson's Warbler, taken respectively June 27 and June 30, 1885. The first was built in a cane, over a pool of stagnant water, at a height of about five feet; the second, also in a cane, was at a height of at least eight feet, and over clear running water. The females of both nests were shot, thus rendering identification absolute.

The second nest was "found when the birds had just begun work, and I watched them repeatedly at their labours.

They would fly up from the ground and, hovering like a Hawk or Kingfisher, fix the leaves in place with their bills. The female laid her first egg June 26, and one on each of the following two days. I took the nest on the fifth day, when dissection of the female showed that the set was complete."

The nest taken June 27 contained two eggs, chipped and on the point of hatching. Unfortunately both were broken in blowing; but Mr. Wayne describes them as "dead white, without spots." He sends me the shells of one, which are quite immaculate.

The set of three eggs just mentioned is also before me. The specimens are in perfect condition, and measure respectively ·75 × ·58, ·77 × ·58, and ·74 × ·58. They are all oval, with the smaller end decidedly blunt and rounded, and in general shape closely resemble the smaller egg of the set described in 'Forest and Stream,' vol. xxiv. no. 24, p. 468. Their ground-colour is also similar—dull white, with a faint but appreciable bluish tinge. One is perfectly plain; another, like the larger egg of the first set, has two or three minute specks, which may be genuine shell-markings; while the third is unmistakably spotted and blotched with pale lilac. Over most of the surface these markings are fine, faint, and sparsely distributed; but about the larger end they become coarser, thicker, and deeper-coloured, forming a well-defined ring or wreath. All three eggs have a slight polish, and the shells look hard and thick for those of a Warbler's eggs.

The nests are similar in general position and construction to the specimen described by me in 'Forest and Stream,' but both differ in certain important details. The one containing the set of three eggs is composed almost entirely of bleached straw-coloured cane-leaves, with an interior lining of pine-needles and a few thread-like strands of black moss, apparently *Tillandsia*. This nest is much the smallest of the four, measuring externally 3·50 in diameter by 3·00 in depth, internally 1·50 in diameter by 1·50 in depth, the greatest thickness of the rim or outer wall being 1·00. Unlike the specimen first described, it is firmly supported on all sides by the fascicled branches among which it rests. Its shape is nearly globular; and although the exterior is rather loosely formed, the structure, as a whole, is neat and compact.

The nest taken June 27 is very much larger—in fact, quite the largest specimen that I have seen, measuring externally 5·00 in diameter by 6·00 in depth, internally 1·50 in diameter by 1·25 in depth, with the rim, in places, 1·75 thick. It is shaped like an inverted cone, the apex extending down nearly to the point of junction of the numerous fascicled stems which surround and support its sides. In total bulk it fully equals the average nest of our Crow-Blackbird, while it is not nearly so finished a specimen of bird-architecture. Indeed it would be difficult to imagine anything ruder than its outer walls—composed of mud-soaked leaves of the sweet gum, water-oak, holly, and cane, thrown together into a loose mass, bristling with rough stems, and wholly devoid of symmetry or regularity of outline. The interior, however, lined with pine-needles, moss-fibres, black rootlets, and a little horsehair, is not less smooth and rounded than in the other specimens.

The acquisition of these additional nests is important, as tending to show that the position and construction of the first two nests, and the character of the eggs which one of them contained, were not exceptional. The total results of Mr. Wayne's labours may be summed as follows:—Four nests, taken respectively June 5, 6, 27, and 30, contained respectively one young bird a few days old, one young bird and two addled eggs, two eggs on the point of hatching, and three perfectly fresh eggs. All four nests were essentially similar, being bulky and loosely formed, composed mainly of dry leaves, lined with fine roots, moss-fibres, pine-needles, and horsehair, and placed in canes over water at heights varying from four to eight feet. Of the seven eggs taken, four were immaculate, two perhaps slightly spotted, and one unmistakably spotted and blotched with lilac.

The inferences suggested by these facts are:—(1) The Swainson's Warbler nests usually, if not invariably, in canes over water; (2) that it lays from one to three eggs; (3) that its eggs may be either plain, slightly speckled, or rather thickly and distinctly marked.